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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,937	05/23/2001	Victor Wai Leung Lee	225133600008	9995

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EXAMINER

LAO, TIM P

ART UNIT PAPER NUMBER

2655

DATE MAILED: 03/09/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

PM

Office Action Summary

Application No.

09/863,937

Applicant(s)

LEE ET AL.

Examiner

Tim Lao

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karaorman et al. (U.S. Patent 6,631,346 B1) in view of Balakrishnan et al. (U.S. Patent 6,182,038 B1) and Thelen et al. (U.S. Patent 6,526,380 B1).

Claim 1

Karaorman et al. show:

A computer-implemented method (see Abstract) for generating speech models for use in speech recognition of a user speech input, comprising the steps of:

determining word conceptual networks (e.g., 'get me a flight to Boston ...', col.3, ll.12-13; 'get me a red shirt that costs \$30') that are formed by grouping words with pre-selected pivot words (e.g., city name, date, etc., col.3, ll.16; color, size, prices, col.3, ll.60-61), said groupings of words forming phrases directed to pre-selected concepts (e.g., domain of purchasing flight ticket, col.3, ll.10-15; domain of purchasing a merchandise, col.3, ll.29-32); *{The grouping of words to form phrases is performed by the global parser 62 (col.3, ll.5-6, ll.15-8).}*

Karaorman et al. do not show:

associating phoneme networks with the words in the word conceptual networks, said phoneme networks containing probabilities for recognizing the words in the word conceptual networks; and

partitioning a language model into sub-language models based upon the pivot words, said sub-language models including the phoneme networks that are associated with the

words grouped with the sub-language models' respective pivot words.

Balakrishnan et al. teach:

associating phoneme networks with the words in the user's input speech (col.2, ll.11-22, said phoneme networks (Fig.1, col.2, ll.52-67) containing probabilities (e.g., scores) for recognizing the words in the user's input speech; (col.4, ll.66-67; col.5, ll.1-38) and *{Associating is met by finding and retrieving the phoneme network candidate that matches the words in the user's input speech. (col.5, ll.15-38)}*

Thelen et al. teach:

partitioning a language model (e.g., huge vocabulary model, col.2, ll.1) into sub-language models (e.g., plurality of context specific vocabulary model, col.2, ll.2-3) based upon the pivot words (e.g., 'color', col.2, ll.16-18), said sub-language models including the phoneme networks (e.g., phrases that are formed with words such as 'color' and 'collar' that are context specific, i.e., domain specific) that are associated with the words grouped with the sub-language models' (e.g., context specific vocabulary models) respective pivot words. (col.1, ll.53-67; col.2, ll.1-29)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the speech recognition method of Karaorman et al. to include the method of Balakrishnan et al. and Thelen et al. in order to partition large language model into sub-language models for performing speech recognition based on phoneme networks containing pivot words. The advantage for combining the arts would be an effective and accurate speech recognition system and method (Thelen et al., col.2, ll.1-3, ll.12-14; col.4, ll.6-8).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Documents:

[1] 5,806,030	09/1998	Junqua
[2] 6,233,553 B1	05/2001	Contolini et al.
[3] 6,182,039 B1	01/2001	Rigazio et al.
[4] 6,029,132	02/2000	Kuhn et al.
[5] 5,819,221	10/1998	Kondo et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Lao whose telephone number is 703-305-8955. The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL
03/01/2004

Tim Lao
Examiner
Art Unit 2655



DORIS H. TO

3/5/04

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800